State of Oregon
Department of Environmental Quality **Memorandum**

Date: June 27, 2016

To: Eva DeMaria, USEPA

Through: Scott Manzano, DEQ Northwest Region Cleanup Manager

From: Alex Liverman, Portland Harbor Stormwater Coordinator

Subject: Source Control Decision
Owens Corning - Linnton Roofing and Asphalt Facility
ECSI # 1036

1.0 Introduction

This memo presents the basis for the Department of Environmental Quality source control decision for the Owens Corning - Linnton Roofing and Asphalt Facility site, located at 11444 and 11910 NW St Helens Road in Portland.

OC – Linnton completed a Source Control Evaluation report (Kennedy/Jenks 2010) for the stormwater pathway at the site in accordance with the 2005 *EPA/DEQ Portland Harbor Joint Source Control Strategy*, also known as the JSCS. DEQ requested additional information and evaluation in 2014 and OC Linnton responded with a Work Plan (Kennedy/Jenks 2014) and an Addendum to the Source Control Evaluation Report (Kennedy/Jenks 2015).

DEQ concludes from review of the Source Control Evaluation report, Addendum and supporting documents that OC - Linnton has identified and controlled upland sources of contamination from current and past operations such that contaminant transport pathways at the site do not pose a significant current or future threat to the Willamette River. On-going control measures will be applied at the site as regulated by the NPDES 1200Z Industrial Stormwater General Permit.

Potential upland risks that are not subject to transport to the river have not been fully evaluated. DEQ prepared a data gaps analysis memorandum in September 2015, which lists deficiencies of information that must be resolved for the site to receive a No Further Action determination for all or part of the site.

2.0 Site Description and History

The OC – Linnton site covers approximately 44.3 acres bordering the west bank of Willamette River at approximately river mile 3.5, as shown in Figure 1. Topography is relatively flat. A functional dock provides river access, though it is currently not used for business at the site.

Wood products manufacturing occurred on the site beginning in 1908. A variety of industrial operations have occurred since then on the site, including: a wholesale lumber yard from 1938 to 1972; lumber treating from 1969 to 1971; woodchip exporting from 1972 to 1978; industrial supplies from 1977 to 1985; veneer production for plywood manufacturing from 1978 to 1990; general contracting from 1987 to 1990; and the current production of asphalt products, since 1981 (DEQ 1999). OC – Linnton acquired the site in 1981 and a plywood mill was deconstructed on the southern portion of the site, which currently remains undeveloped and is vegetated with grass and trees. Stormwater infiltrates and no conveyance system or overland discharge occurs in the southern portion of the site. In 1982, OC – Linnton began operating as an asphalt storage and loading facility, with the last ship delivery in 1991. The northern portion of the site is ringed by a roughly oval-shaped earthen and concrete berm and OC – Linnton currently uses this area to receive asphalt shipments via rail and truck, which they use to manufacture asphalt products for paving, roofing and industrial uses.

Current activities on the site are depicted on Figure 2 and include asphalt receiving, processing and product storage, as well as administrative offices and stormwater collection for reuse. There are 33 above ground storage tanks with a collective capacity of approximately 7.8 million gallons. Approximately 7.5 million gallons of capacity stores asphalt-based products that mostly solidify when cooled (as in the event of a spill) and must be heated for transfer. The remaining tanks and drums are smaller and store up to 300,000 gallons of petroleum-based products, which are mostly used for heating and processing asphalt. All tanks and two, double-walled underground transfer pipes are located in areas with primary and secondary containment features. Tanks storing petroleum-based products are governed by a Spill Prevention, Control and Countermeasures Plan, which describes operational and structural protections in place and is reviewed every five years.

With the exception of small gravel, grass and pond areas, the operational northern portion of the site is impervious because it is paved with asphalt or roofed. Runoff from impervious areas is captured in three drainage basin areas and water not reused for operational cooling or irrigation, is eventually discharged to the Willamette River within the Portland Harbor Superfund Site, through one of three outfalls (see Figure 2).

Groundwater in the southern portion of the site has been monitored at depths varying from approximately eight to 20 feet below the ground surface. While groundwater has not been investigated in the northern portion of the site, it is assumed to be similar.

3.0 Site Investigation and Regulatory History

As documented on DEQ's ECSI database, in DEQ's site-related files and in the 2010 Source Control Evaluation Report, multiple site investigations and removal actions have occurred and the site holds several permits.

A leaking underground storage tank and gasoline contaminated soil were removed from the southern border of the property in 1989. Following decommissioning and follow-up sampling of soil and groundwater, DEQ issued a No Further Action determination for this removal on September 29, 1992 (LUST log #26-90-0006).

Various preliminary assessments of the site were undertaken beginning in 1990 and DEQ issued a Site Assessment Program – Strategy Recommendation on September 3, 1999. DEQ recommended that the site undertake a high priority Expanded Preliminary Assessment, due to site-related chemicals (polycyclic aromatic hydrocarbons or PAHs) found at elevated concentrations in Willamette River sediment offshore from the facility.

OC-Linnton entered into a voluntary agreement with DEQ in November 1999, to pursue an Expanded Preliminary Assessment and Source Control Evaluation. Potential pathways of contaminant migration to the river identified included: stormwater discharge outfalls; sheet flow discharge from across the site; soil erosion; and shallow groundwater discharge. Reporting on this expanded assessment was submitted in April 2000, March 2001 and March 2002.

In March 2002, OC – Linnton completed improvements to the Greenway area along the riverbank on the southern portion and part of the northern portion of the site, under permits with the City of Portland. Work included removal of blackberries and establishment of native shrubs.

Source control evaluation focused on the northern, operational portion of the site and the stormwater pathway. OC – Linnton submitted a Stormwater Source Control evaluation report in July 2010. DEQ review in 2014 concluded that stormwater had not been adequately characterized and requested additional sampling and analysis, including additional outfall sampling with an expanded analyte list. An informal work plan was approved by DEQ in August 2014, which was implemented by OC – Linnton and an addendum to the Source Control Evaluation report was finalized in May 2015.

Operations at the site require regulation of waste water and stormwater under National Pollutant Discharge Elimination System and Water Pollution Control Facility permits. The site obtained coverage under the NPDES 1300J general permit for stormwater associated with bulk petroleum facilities in 1994 and began operating under the NPDES 1200Z Industrial Stormwater general permit in 2007. Registration under the revised 1200Z permit was granted in 2012. The facility also operates according to WPCF permits 100-J and 500-J for non-contact cooling water and boiler blowdown, respectively, and maintains an air emissions permit (DEQ ADP 26-3067).

4.0 Source Control Evaluation

Because the site is located within the Portland Harbor Superfund Site, upland source control investigations were guided by the JSCS. The objective of a source control evaluation is to determine whether existing and potential sources of contamination at the

site have been identified and if additional characterization or source control measures are needed. Each potential pathway to mobilize contamination from the site to the river is explored and these determinations generally rest upon demonstrating that site-related information provides sufficient support to make the following findings:

1. Existing and potential facility-related contaminant sources have been identified and characterized.

2. Contaminant sources were removed or are being controlled to the extent feasible.

3. Performance monitoring conducted after source control measures were implemented supports the conclusion that the measures are effective.

4. Adequate measures are in place to ensure source control and good management measures occur in the future (DEQ 2010).

Potential pathways for transport of contamination to the river identified at this site include: groundwater discharge or facilitated transport in or along utility lines; overland surface flow and soil and bank erosion; and stormwater discharge.

4.1 Groundwater Pathway

Groundwater flows from the east toward the river at approximately 8 to 20 feet below ground surface. As documented in the Preliminary Assessment (DEQ 1991), benzene, ethylbenzene, arsenic and copper were detected above JSCS screening level values and preliminary remediation goals in one upland monitoring well during the investigations in the late 1980s and early 1990s. These samples were associated with a leaking underground storage tank in the south portion of the site. Following tank remediation and soil removal, groundwater contaminants rapidly decreased and were not detected in monitoring wells installed down gradient. No stormwater conveyances serve the undeveloped southern area of the site. While elevations of existing stormwater conveyance pipes on the operational area of the property may, at times, interact with seasonal high groundwater levels, no releases to groundwater have occurred in this northern portion of the site. As such, even if groundwater transport is sometimes facilitated by infiltration to stormwater lines, contamination is not expected to be present. Thus, the groundwater pathway was not evaluated further for source control.

4.2 Overland Surface Flow and Bank Erosion Pathway

As documented in the 2001 Expanded Preliminary Assessment Sampling Results (Kennedy Jenks), samples of surface soil were collected and analyzed from four points spanning the shoreline of the site and borings to 11 to 14 feet were collected and analyzed from locations upland of shoreline samples. Soils data are presented in Tables 1 and 2 and sampling locations are depicted in Figure 3. Detections of PAHs were an order of magnitude lower than the Portland Harbor preliminary remediation goal value associated with remedial action objective 9. Arsenic was detected in one upland boring location with

concentrations between 3.5 to 11.5 feet below ground surface of 17.3 mg/kg to 20.4 mg/kg, which are moderately above the PRG and regional background concentration (DEQ 2013). Arsenic was evaluated in this boring because it was the closest boring to the former wood treating area, further upland. Arsenic concentrations in the boring were comparable to those found in soils near the former wood treating area, which were determined to be within the range of background concentrations and not remediated further (Kennedy/Jenks 2001). Given the depth of detected arsenic, exposure to overland flow or bank erosion to the river is highly unlikely and therefore, not of concern for source control.

The operational portions of the site are ringed by a part earthen and part concrete berm, preventing overland flow from the site from flowing over the bank. In addition, a 330 foot section of earthen berm was replaced with concrete and surfaces were paved up to this boundary to prevent berm sediment from being entrained in stormwater and flowing into the stormwater conveyance system. The undeveloped, southern portion of the site allows rain to infiltrate where it falls and no overland flow has been observed in this portion of the site. In addition, the Greenway stretch of the bank extending from the dock in the northern, operational portion of the site along the extent of the undeveloped, southern portion of the site is terraced and vegetated, allowing infiltration of rainfall rather than concentrated surface flow. The photos included as Figure 4 show that the banks slope relatively gently down from the site to a beach, are heavily vegetated and armored in places with rip rap. As such, erosion is not anticipated to occur in any significant way and overland flow of runoff does not occur. Therefore, the overland surface flow and bank erosion pathways were not considered further for source control.

4.3 Stormwater Pathway

4.3.1 Site Stormwater Drainage and Management

No stormwater collection or conveyance facilities are present in the currently undeveloped southern portion of the site. Rather precipitation infiltrates on pervious ground where it falls and has not been observed to concentrate and flow overland to the terraced and vegetated Greenway area or the river beyond. Because stormwater does not discharge to the river from this portion of the site, so collection or analysis was required.

As shown on Figure 2, stormwater in the operations area in the northern portion of the site is handled in three areas, numbered 1, 2 and 3, in correspondence to the outfall through which it is discharged. Short riverward sections of stormwater conveyance lines serving Outfalls 1 and 2 were cleaned of debris in 2008. Activities in Area 1 include tanker truck and car parking, storage and asphalt unloading from trucks and railcars. Stormwater in Area 1 is collected by catch basins with filter inserts or vaults and conveyed to Outfall 1, which is equipped with an isolation valve (left open in the rainy season, but closed in the event of a spill). Area 2 activities include offices, parking and asphalt product manufacturing, the most chemical intensive of which is contained within bermed areas. Stormwater captured within these containment areas is reused as non-contact cooling water for manufacturing processes. Stormwater in Area 2 and from the

dock is captured in catch basins with filter inserts or vaults and conveyed with permitted boiler blowdown and non-contact cooling water to a 5,700 gallon stormwater sump. Following settling and sorbent skimming, if needed, sump water is pumped via two 500 gallons per minute lift stations to an oil/water separator. Stormwater is then pumped through a sprinkler system for use in irrigating site landscaping or is discharged to the ODOT pipe carrying Highway 30 discharges through the property. This pipe eventually discharges through Outfall 2, which is also equipped with an isolation valve. More than one million gallons were beneficially used for irrigation in 2013-14, rather than being discharged to the river. Activities in Area 3 include warehousing and outdoor storage of shrink-wrapped finished products and tanker truck parking. Stormwater evaporates or sheet flows from this area to a single catch basin with a filter insert and is discharged through Outfall 3. The Outfall labeled X discharges stormwater conveyed from Highway 30 under the facility, but does not convey any facility-related discharges.

4.3.2 Stormwater and Solids Evaluation

All available stormwater and stormwater solids data were compared to applicable Portland Harbor JSCS screening level values (from JSCS Table 3-1) and draft preliminary remediation goals (from July 31, 2015 draft Feasibility Study). Applicable PRGs associated with remedial action objective 9 were used for solids evaluations and those associated with RAOs 3 and 7 were used for stormwater evaluations.

As another line of evidence, when contaminants were detected at concentrations exceeding applicable SLVs or PRGs, concentrations were compared to DEQ charts from *Appendix E: Tools for Evaluating Stormwater Data* found in DEQ 2010. This tool was created by compiling contaminant concentration data from many of the stormwater and stormwater solids samples collected at Portland Harbor-area heavy industrial sites. This data was used to create a series of charts that plot rank-order samples against contaminant concentrations, and are used to identify contaminant concentrations in samples that are atypically elevated. Concentrations falling within the upper/steeper portion of the curve are an indication that uncontrolled contaminant sources may be present at the site and that additional evaluation or source control measures may be needed. Concentrations that fall on the lower/flatter portion of the curve suggest that stormwater is not being unusually impacted by contaminants at the site, and while concentrations may exceed the risk-based SLVs, they are within the range found in stormwater from active industrial sites in Portland Harbor.

While SLVs and PRGs were not included in all tables and data were not plotted on rank-order curves, DEQ performed these evaluations and discusses results in the sections that follow.

4.3.3 Source Control Stormwater Solids Sampling

Stormwater solids were collected in 2007 from the catch basin/vault in basin 1 (CB-1) and from the oil/water separator in basin 2 (CB-2). Analytes were limited to PCBs, phthalates, PAHs and total organic carbon, as presented in the first column of Table 3. DEQ's analysis of the data found that PCBs were not detected. Bis(2-ethylhexyl)phthalate exceeded the SLV and PRG, but fell within the flat portion of the rank-order curve. Two

individual PAHs slightly exceeded SLVs in CB-2 and fell within the knee of the rank-order curve.

4.3.4 NPDES Monitoring

Stormwater from Areas 1 and 2 is managed under the NPDES 1200Z permit, which requires implementation of best management practices, as described in the site's Stormwater Pollution Control Plan (included as an appendix in the Stormwater Source Control Evaluation report), along with regular monitoring and corrective actions, as warranted by comparison of monitoring results to permit benchmarks and reference concentrations. NPDES 1200Z Industrial Stormwater General Permit results from 2009 to 2014 are provided in Table 4. The 2014 to 2015 NPDES monitoring indicate that the facility is in compliance with the 1200Z permit for these discharges. Permit monitoring data prior to 2012 included only a limited subset of contaminants of concern for the site. While concentrations of copper, lead and zinc measured prior to 2012 slightly exceed Portland Harbor SLVs, concentrations of these metals and total suspended solids all fell within the flat portion of DEQ's rank-order curves of concentrations measured at other heavy industrial sites within the uplands surrounding Portland Harbor. Many of the contaminants on the 1200Z permit expanded analyte list from 2012 to present (TSS, Cu, Pb, Zn, Cd, Ni, Cr, aldrin, DDT, DDE, dieldrin, Fe, PCBs, PCP, PAHs) were not detected. Some detected metals concentrations exceeded SLVs and/or PRGs, but these and TSS fell under the flat portion of the rank-order curves.

4.3.5 Source Control Stormwater Sampling

The facility sampled all three outfalls for source control purposes and analyzed for contaminants of concern for Portland Harbor, including those found to be elevated in river sediment to which the outfalls discharge, and contaminants related to the current and historical operations at the site. Monitoring results from the initial source control investigation in 2007 at outfall 1 and 2 are provided on Table 3. In addition to NPDES monitoring, Table 4 also includes two rounds of source control monitoring from November and December of 2014, presented as the last two events at each outfall. As presented in Table 4, most analytes were not detected. Some detected metals concentrations exceeded the SLVs, but fell within the flat portion of the rank-order curves. Bis(2-ethylhexyl)phthalate exceeded the SLV and PRG and fell in the steep portion of the rank-order curve for the November 2014 sampling event. However, the laboratory reports that Bis(2-ethylhexyl)phthalate was also detected in the laboratory blank. Because there were no detections of Bis(2-ethylhexyl)phthalate in the December 2014 sampling event and that Bis(2-ethylhexyl)phthalate was not found to be elevated in river sediments to which the outfalls discharge, additional source control measures are not warranted.

4.4 Contaminants of Potential Concern

Based on historical and current site operations, site sampling results and offshore sediment sampling results, the following contaminants are of potential concern in the stormwater system at the site:

- PAHs

- Metals

While only copper, mercury and PAHs were found at elevated concentrations in the sediment area of potential concern #4 off shore of the facility, the stormwater evaluation looked at the full suite of analytes from Table 3-1 of the Joint Source Control Strategy.

4.5 Lines of Evidence Evaluation

As noted in Sections 4.1 and 4.2 above, the groundwater and overland flow/bank erosion pathways were excluded from concern during the source control evaluation. Section 4.3 provides information on characterization and control of the stormwater pathway to support the four findings listed in Section 4.0, as follows:

1. Investigation of the stormwater flow and conveyance pathways and management practices and treatment methodologies produced data and information that adequately characterized potential site sources that could be transported through stormwater to the river.
2. While no specific sources were identified, additional management practices and treatment measures were applied to reduce and improve stormwater discharges. These included sediment removal from stormwater lines, installation and improvement of containment berms, installation and regular maintenance of catch basin filter inserts, installation of a terraced and vegetated Greenway area, and reconfiguration of the stormwater system to beneficially resuse more than a million gallons of treated stormwater annually for irrigation rather than discharging it to the river.
3. Performance monitoring of site stormwater discharges indicates that concentrations of contaminants, including those found elevated in sediment to which site outfalls discharge, remain near SLVs/PRGs and below the flat part of the rank-order curves.
4. On-going implementation of the site's Stormwater Pollution Control Plan, monitoring and any needed corrective actions will continue under the NPDES 1200Z permit.

4.6 Source Control Decision

Based on review of the file, DEQ concludes that this upland site is adequately characterized and follow-up monitoring confirms that source tracing and iteratively applied control measures have been effective for minimizing pollutants leaving the site via the stormwater pathway. The property does not appear to be a current or reasonably likely future source of contamination to the Willamette River, provided that effective stormwater source control measures are implemented and maintained. Site stormwater discharges will continue to be regulated under the NPDES 1200Z Industrial Stormwater General Permit, which includes regular monitoring and implementation of corrective actions to maintain compliance.

5.0 References

DEQ. 2013. *Development of Oregon Background Metals Concentrations in Soil*. March 2013. http://www.deq.state.or.us/lq/pubs/docs/cu/DebORbackgroundMetal.pdf

DEQ. 2010. *Guidance for Evaluating the Stormwater Pathway at Upland Sites*. October 2010. http://www.deq.state.or.us/lq/cu/stmwtrguidance.htm

DEQ and USEPA. 2005. *Portland Harbor Joint Source Control Strategy*. December 2005. http://www.deq.state.or.us/lq/cu/stmwtrguidance.htm

DEQ. 1999. *Site Assessment Program - Strategy Recommendation*. September 3, 1999.

DEQ. 1991. Preliminary Assessment of Linnton Planing Mill.

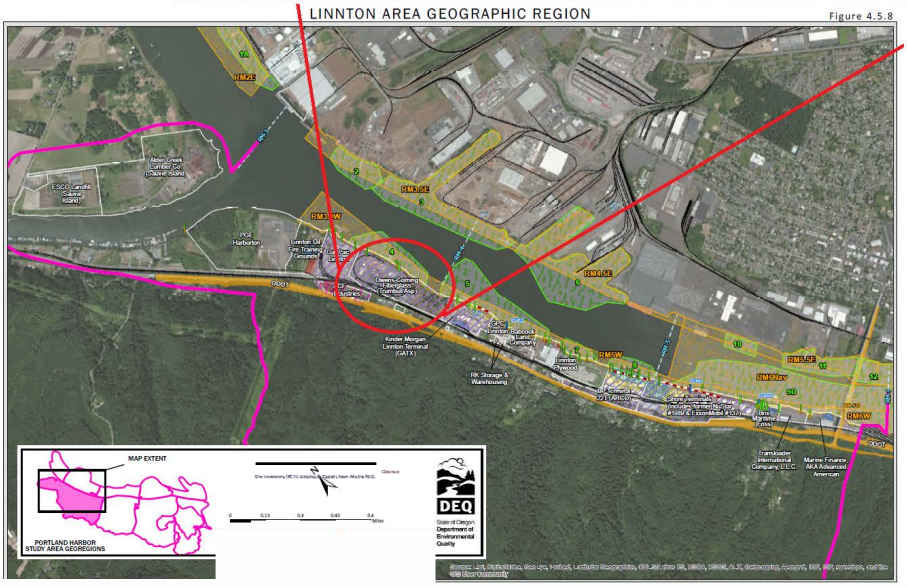
Kennedy/Jenks Consultants. 2015. *Addendum to Stormwater Source Control Evaluation of the Linnton Asphalt Facility*. April 7, 2015, revised May 8, 2015.

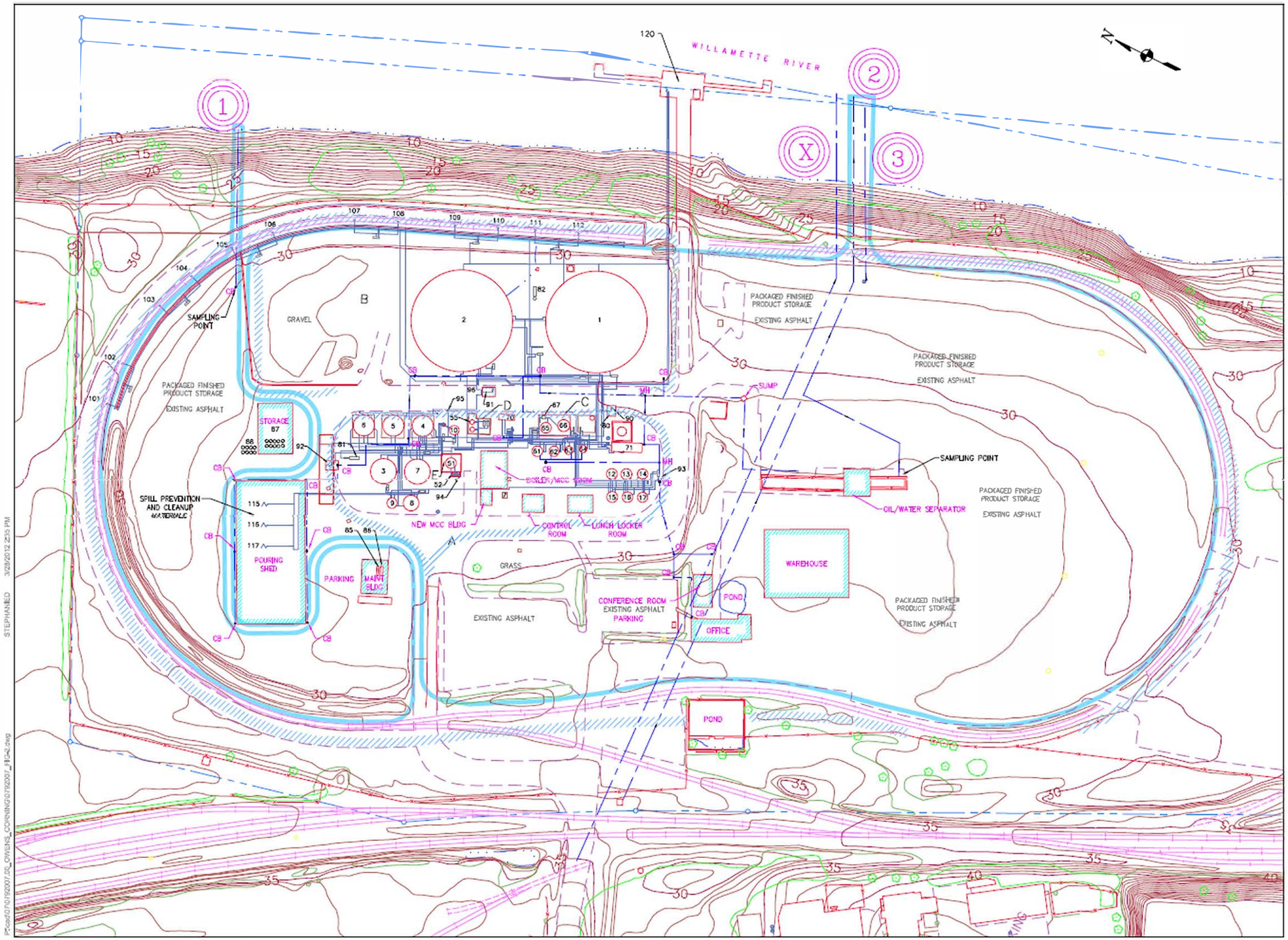
Kennedy/Jenks Consultants. 2010. *Stormwater Source Control Evaluation of the Linnton Asphalt Facility*. October 5, 2009, revised July 19, 2010.

Kennedy/Jenks Consultants. 2001. *Expanded Preliminary Assessment Sampling Results*. March 2001.

Owens Corning. 2012. *Spill Prevention, Control, and Countermeasure Plan – Linnton Asphalt Plant*. Revised November 8, 2012.

FIGURE 1: SITE LOCATION





Portland Asphalt Plant			
Container Listing			
ID	Container Name	Material	Gallons
1	Tank – 1	Asphalt – Flux	3,428,022
2	Tank – 2	Asphalt – Flux	3,426,814
3	Tank – 3	Asphalt Product	169,292
4	Tank – 4	Asphalt Product	113,709
5	Asphalt	Recycle Asphalt	1,175
6	Tank – 6	Asphalt Product	113,632
7	Tank – 7	Asphalt Product	173,776
8	Tank – 8	Asphalt Product	61,751
9	Tank – 9	Asphalt Product	32,086
10	Tank – 10	Asphalt Product	12,532
12	Tank – 12	Asphalt Product	31,400
13	Tank – 13	Asphalt Product	31,236
14	Tank – 14	Asphalt Product	26,995
15	Tank – 15	Asphalt Product	27,952
16	Tank – 16	Asphalt Product	31,230
17	Tank – 17	Asphalt Product	30,864
51	Tank – 51	Cutter Stock	21,642
52	Cutter Stock Drum	Cutter Stock	55
55	Hot Oil Expansion Tank	Mobiltherm	446,500
61	Converter 1	Asphalt	42,228
62	Converter 2	Asphalt	42,228
63	Converter 3	Asphalt	18,768
64	Converter 4	Asphalt	18,768
65	Knockout Tank 1	Cutter Stock	3,454
66	Knockout Tank 2	Cutter Stock	5,181
67	Cutter Stock Dryer	Cutter Stock	480
70	Pre-Heater 1	Asphalt	500
71	Pre-Heater 2	Asphalt	500
80	LR 1 Filter	Cutter Stock	>55
81	Fiber Bed Filter 2	Cutter Stock	>55
82	Fiber Bed Filter 3	Cutter Stock	>55
85	Large Parts Cleaner	Cleaning Fluid	163
86	Medium Parts Cleaner	Cleaning Fluid	74
87	Inside Drum Storage	Petroleum Products	10 @ 55
88	Outside Drum Storage	Partially Filled & Empty Drums	8 @ 55
	Linnton Loading/Unloading		
90	Truck Loading Rack 1	Asphalt Product	
91	Truck Loading Rack 2	Asphalt Product	
92	Truck Loading Rack 3	Asphalt Product	
93	Truck Unloading by Tank 14	Asphalt Product	
94	Cutter Stock	Cutter Stock	
95	Truck Unloading by Tank 6	Asphalt Flux	
96	Truck Unloading by Tank 2	Asphalt Flux	
101–	Railroad Unloading 1–12	Asphalt Flux	
112			
115	Pouring Shed – East Nozzle	Roofing Asphalt	
116	Pouring Shed – Middle Nozzle	Roofing Asphalt	
117	Pouring Shed – West Nozzle	Roofing Asphalt	
120	Ship Dock	Asphalt Flux	

LEGEND

- STORMWATER PIPELINE FLOW
- DRAINAGE BASIN
- CONTAINMENT BERM
- CB — STORM DRAIN CATCH BASIN
- (2) — DRAIN OUT–FALLS

0 100 200
1"=120'

CONTOUR INTERVAL = 1'

STORM WATER RUN–OFF OUT–FALL ZONES

APPROXIMATE RUN–OFF IN SQUARE FEET

ZONE	BUILDING ROOFS	OPEN CONCRETE OR PAVED AREAS	GRAVEL/DIRT AREAS	POND AREAS	TOTAL PER ZONE
1	4,000 SQ FT	92,000 SQ FT	2,000 SQ FT	0	98,000 SQ FT
2	29,200 SQ FT	457,000 SQ FT	59,800 SQ FT	1000 SQ FT	547,000 SQ FT
TOTAL	33,200 SQ FT	549,000 SQ FT	61,800 SQ FT	1000 SQ FT	645,000 SQ FT

Kennedy/Jenks Consultants

OWENS CORNING LINNTON SITE
ST. HELENS ROAD
PORTLAND, OREGON

FIGURE 2: SITE LAYOUT

Figure 3: Soil and Groundwater Sampling Locations

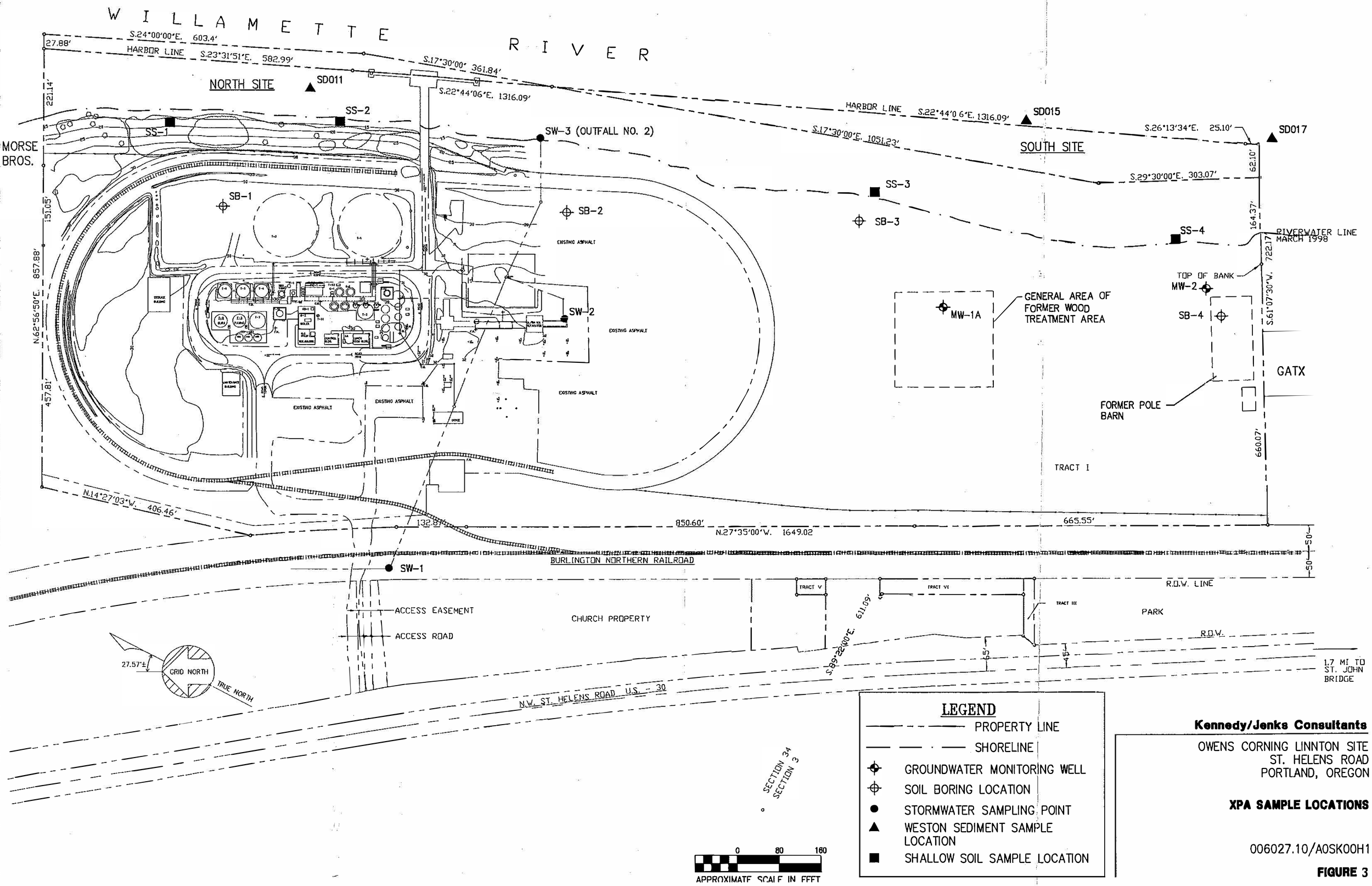


FIGURE 4: BANK PHOTOS

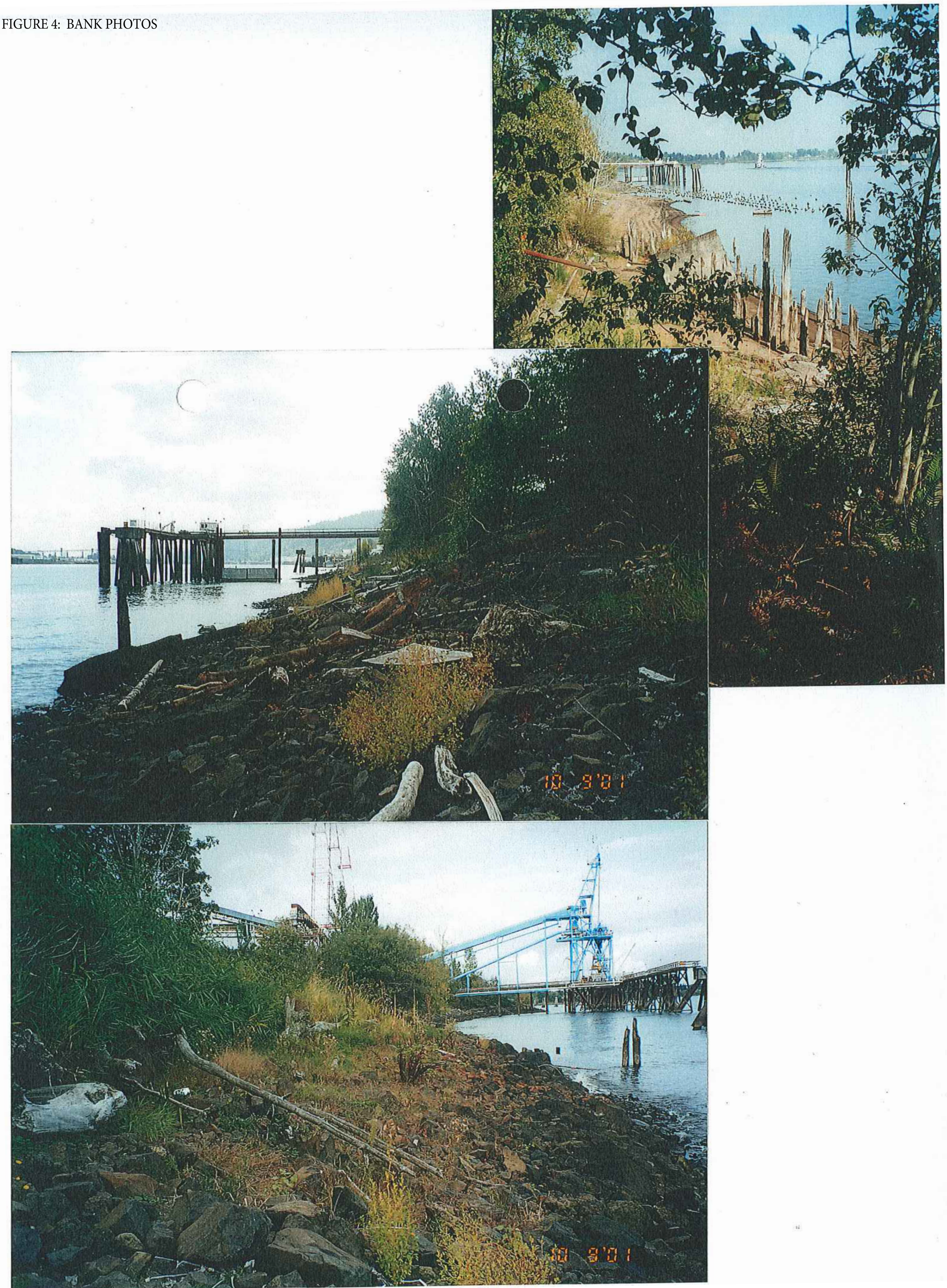


Table 1: Soil Borings 2000

Revised June 2016
Soil Boring Analytical Results, 10 August 2000
Owens Corning Linnton Site

Analysis	Sample Designation									DEQ Sediment SLVs[a]	PH DRAFT Final FS[b]	
	SB-1 4.5-5	SB-1-10.5-11	SB-2-7.5-8	SB-2-11.5-12	SB-3-5-5.5	SB-3-11-11.5	SB.4-2.5-3	SB-4-6-6.5	SB-4-13.5-14		RAO 5 PRG[iii]	RAO 9 PRG[d]
LMW[c] PAH[f] (ug/kg)[g,h,iv]												
Naphthalene	<26.8[j]	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	176	--	--
Acenaphthylene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	160	--	--
Acenaphthene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	290	--	--
Fluorene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	77	--	--
Phenanthrene	32.3	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	42	--	--
Anthracene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	57	--	--
HMW[i] PAH (ug/kg)[g]												
Fluoranthene	60.5	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	111	--	--
Pyrene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	14.8	53	--	--
Benzo(a)anthracene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	32	--	--
Chrysene	28.9	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	57	--	--
Benzo(b)fluoranthene	38.9	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	--	--	--
Benzo(k)fluoranthene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	27	--	--
Benzo(a)pyrene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	32	--	--
Indeno(1,2,3-c,d)pyrene	28.4	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	17	--	--
Dibenz(a,h)anthracene	<26.8	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	33	--	--
Benzo(g,h,i)perylene	45.4	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	300	--	--
Total LMW PAH	32.3	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	76	--	--
Total HMW PAH	202.1	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	14.8	193	--	12
Total PAHs	234.4	<26.8	<13.4	<13.4	<13.4	<13.4	<13.4	<13.4	14.8	1,610	23,000	23,000
Total Arsenic (mg/kg)[iv,v]	NA	NA	NA	NA	20.4	17.3	NA	NA	NA	6	--	3
NWTPH[m] (mg/kg)[n]												
Gasoline	<20	<20	<20	<20	<20	<20	<20	<20	<20	--	--	--
Diesel	<50	<50	<50	<50	<50	<50	<50	<50	<50	--	--	--
Heavy Oil	<100	<100	<100	<100	<100	<100	<100	<100	<100	--	--	--

[a] DEQ Guidance for Level II Ecological Risk Assessment Screening Level Values, Table 2. DEQ. April 1998. Freshwater Sediment
[b] DRAFT Final Portland Harbor Feasibility Study (DFPHFS), Section 2.2 Tables. Provided by DEQ via email dated 15 March 2016.
[iii] DFPHFS Table 2.2-8, Remedial Action Objective (RAO) 5 Preliminary Remediation Goal (PRG) Derivation.
[d] DFPHFS Table 2.2-12, RAO 9 PRG Derivation.
[e] LMW = Low molecular weight
[f] PAH = Polycyclic aromatic hydocarbons
[g] Samples were analyzed by EPA Method 8270 SIM.
[h] ug/kg = micrograms per kilogram
[i] < = not identified above the indicated laboratory detection limit
[j] HMW = High molecular weight
[iv] Sample Analyzed by EPA Method 6020.
[v] mg/kg = milligrams per kilogram
[m] Samples analyzed using the Northwest Total Petroleum Hydrocarbon (NWTPH) Gx and Dx Methods.

Table 2: Near Surface Soil 2001

Revised June 2016
Near-Surface Soil Analytical Results
Owens Corning
Linnton Site, Portland, Oregon

Analysis	Sample Designation[a]																DEQ Sediment SLVs[b]	PH DRAFT Final FS[c]	
	North Area								South Area										
	SS-1	SS-1a	SS-1b	SS-1c	SS-1d	SS-1e	SS-1f	SS-1g	SS-4	SS-4a	SS-4b	SS-4c	SS-4d	SS-4e	SS-4f	SS-4g		RAO 5 PRG[d]	RAO 9 PRG[e]
LMW[f] PAH[g] (ug/kg)[h,i,j]																			
Acenaphthene	<67[k]	<26.8	<13.4	<13.4	<26.8	<26.8	<26.8	<26.8	<134	<26.8	<67.0	103	<26.8	<26.8	<67.0	<26.8	290	–	–
Acenaphthylene	123	<26.8	19.3	<13.4	42.9	<26.8	88.2	47	<134	75.3	<67.0	142	33.1	58.0	<67.0	<26.8	160	--	--
Anthracene	<67	29.3	<13.4	<13.4	35.3	<26.8	55.8	<26.8	<134	92.4	69.9	414	27.1	66.5	<67.0	<26.8	57	–	–
Fluorene	<67	<26.8	<13.4	<13.4	<26.8	<26.8	<26.8	<26.8	<134	<26.8	<67.0	204	<26.8	<26.8	<67.0	<26.8	77	--	--
Naphthalene	113	<26.8	<13.4	<13.4	<26.8	<26.8	<26.8	<26.8	223	40	<67.0	107	<26.8	62.3	<67.0	<26.8	176	–	–
Phenanthrene	<67	31	<13.4	<13.4	75.5	<26.8	141	<26.8	<134	190	269	1480	143	381	241	73.1	42	--	--
HMW[k] PAH (ug/kg)[g]																			
Benzo(a)anthracene	330	57.3	24.3	30.4	145	51.9	180	75	369	280	238	883	147	193	165	122	32	–	–
Benzo(a)pyrene	450	63	47.9	40.4	251	77.3	348	159	327	358	240	855	211	159	179	172	32	–	–
Benzo(b)fluoranthene	289	108	40.1	35.3	240	70.6	231	119	221	381	362	1060	204	209	235	153	–	–	–
Benzo(g,h,i)perylene	401	56.7	63.1	35.2	245	68.1	396	189	543	388	176	436	159	109	139	194	300	–	–
Benzo(k)fluoranthene	318	57.8	27.4	30.4	123	49.3	212	96.2	<670	270	223	710	140	173	180	108	27	–	–
Chrysene	301	89.1	33.1	40.6	174	65.3	241	101	<670	386	458	1060	212	304	287	150	57	–	–
Dibenz(a,h)anthracene	475	<26.8	<13.4	<13.4	55.5	<26.8	68.1	32.6	<670	81.5	<67.0	194	36.2	32.3	<67.0	34.7	33	–	–
Fluoranthene	320	87.7	28.5	36.3	172	68.3	253	69.8	<670	405	<67.0	1570	376	389	368	195	111	–	–
Indeno(1,2,3-c,d)pyrene	76.6	50	44.4	28.1	192	55.1	285	138	<670	291	147	461	129	90.6	119	139	17	–	–
Pyrene	453	79.3	38.7	42.4	199	72.7	340	94.9	<670	434	475	1230	424	427	368	228	53	–	–
Total LMW PAH	236	60.3	19.3	<13.4	153.7	<26.8	285	47	223	397.7	338.9	2450	203.2	567.8	241	73.1	76	–	–
Total HMW PAH	3,413.6	648.9	347.5	319.1	1,796.5	578.6	2,554.1	1,074.5	1,460	3,274.5	2,319.0	8,459.0	2,038.2	2,085.9	2,040.0	1,495.7	193	–	12
Total PAHs	3,649.6	709.2	366.8	319.1	1,950.2	578.6	2,839.1	1,121.5	1,683	3,672.2	2,657.9	10,909.0	2,241.4	2,653.7	2,281.0	1,568.8	1,610	23,000	23,000
NWTPH[l] (mg/kg)[m]																			
Gasoline	NA	NA	NA	NA	NA	NA	NA	NA	<20	<20	<20	<20	<20	<20	<20	<20	–	–	–
Diesel	NA	NA	NA	NA	NA	NA	NA	NA	<50	30.1	187	97.7	<50	51.9	225	<50	–	–	–
Heavy Oil	NA	NA	NA	NA	NA	NA	NA	NA	1,190	110	803	649	<100	277	719	<100	–	--	--

[a] Samples SS-1 and SS-4 collected on 2 February 2001. Samples SS-1a through SS-1g and SS-4a through SS-4g were collected on 9 October 2001.
[b] DEQ Guidance for Level II Ecological Risk Assessment Screening Level Values, Table 2. DEQ, April 1998.
[c] DRAFT Final Portland Harbor Feasibility Study (DFPHFS), Section 2.2 Tables. Provided by DEQ via email dated 15 March 2016.
[d] DFPHFS Table 2.2-8, Remedial Action Objective (RAO) 5 Preliminary Remediation Goal (PRG) Derivation.
[e] DFPHFS Table 2.2-12, RAO 9 PRG Derivation.
[f] LMW = Low molecular weight
[g] PAH = Polycyclic aromatic hydrocarbons
[h] ug/kg = micrograms per kilogram
[i] Samples were analyzed by EPA Method 8270 SIM.
[j] < = not identified above the indicated laboratory detection limit
[k] HMW = high molecular weight
[l] Samples analyzed using the Northwest Total Petroleum Hydrocarbon (NWTPH) Gx and Dx Methods.
[m] mg/kg = milligrams per kilogram

Table 3: Catch Basin Solids and Stormwater Analytical Results, 2007

	Catch Basin Sample Results 10 April 2007		JSCS Stormwater Sediment SLV[b]	Stormwater Sample Results 20 April 2007		Stormwater Sample Results 2 May 2007		Stormwater Sample Results 06 June 2007		Stormwater Sample Results 18 July 2007		JSCS Water SLV
	Sample Identification CB-1	Sample Identification CB-2		Sample Identification Outfall-1	Sample Identification Outfall-2	Sample Identification Outfall-1	Sample Identification Outfall-2	Sample Identification Outfall-1	Sample Identification Outfall-2	Sample Identification Outfall-1	Sample Identification Outfall-2	
Units	µg/kg[a]	µg/kg		ug/l[c]	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Metals												
Total Copper [d]	-- [e]	--	149,000	**1.98 J**[f,g]	**4.65** [h]	**5.85**	**5.34**	**8.61**	**5.98**	**117**	**8.93**	2.7
Total Lead [d]	--	--	17,000	**0.52 J**	**0.464 J**	**1.58**	**0.41 J**	**0.992**	**1.08**	**1.72**	**0.721**	0.54
Total Zinc [d]	--	--	459,000	**54.5**	**16.4 J**	**48.8**	**21.3 J**	**78**	**102**	**57**	**124**	36
PCBs Aroclors												
Aroclor 1016	<21.3 [i]	<58.7	NE[j]	--	--	--	--	--	--	--	--	0.96
Aroclor 1221	<42.6	<117	NE	--	--	--	--	--	--	--	--	0.034
Aroclor 1232	<21.3	<58.7	NE	--	--	--	--	--	--	--	--	0.034
Aroclor 1242	<21.3	<58.7	NE	--	--	--	--	--	--	--	--	0.034
Aroclor 1248	<21.3	<58.7	NE	--	--	--	--	--	--	--	--	0.034
Aroclor 1254	<21.3	<58.7	NE	--	--	--	--	--	--	--	--	0.033
Aroclor 1260	<21.3	<58.7	NE	--	--	--	--	--	--	--	--	0.034
Aroclor 1262	--	--	NE	--	--	--	--	--	--	--	--	NE
Aroclor 1268	--	--	NE	--	--	--	--	--	--	--	--	NE
Total PCBs[k]	<42.6	<117	0.39	--	--	--	--	--	--	--	--	0.000064
PCB Congeners	--	--	NE	--	--	--	--	--	--	--	--	NE
All 209 PCB congener target analytes	--	--	NE	--	--	--	--	--	--	--	--	NE
Phthalate Esters												
Dimethyl phthalate	<173	<476	NE	--	--	--	--	--	--	--	--	3
Diethyl phthalate	<173	<476	600	--	--	--	--	--	--	--	--	3
Di-n-butyl phthalate	<173	<476	60	--	--	--	--	--	--	--	--	3
Butyl benzyl phthalate	<173	<476	NE	--	--	--	--	--	--	--	--	3
Di-n-octyl phthalate	<173	<476	NE	--	--	--	--	--	--	--	--	3
Bis(2-ethylhexyl)phthalate	**2250**	**2000**	330	--	--	--	--	--	--	--	--	2.2
Polycyclic Aromatic Hydrocarbons												
Naphthalene	<21.3	<117	561	<0.0488	<0.192	<0.0483	<0.0478	<0.0485	<0.0481	<0.0488	<0.0476	0.2
2-Methylnaphthalene	--	--	200	<0.0488	<0.048	<0.0483	<0.0478	--	--	<0.0488	<0.0476	0.2
Acenaphthylene	<21.3	<117	200	<0.0488	<0.048	<0.0483	<0.0478	<0.0485	<0.0481	<0.0488	<0.0476	0.2
Acenaphthene	<21.3	<117	300	<0.0488	**1.24**	<0.0483	<0.0478	<0.0485	<0.0481	<0.0488	<0.0476	0.2
Fluorene	<21.3	<117	536	<0.0488	**1.43**	<0.0483	<0.0478	<0.0485	<0.0481	<0.0488	<0.0476	0.2
Phenanthrene	**85.8 J**	**274 J**	1,170	<0.0488	**0.0874 J**	<0.0483	<0.0478	<0.0485	<0.0481	<0.0488	<0.0476	0.2
Anthracene	<21.3	<117	845	<0.0488	<0.048	<0.0483	<0.0478	<0.0485	<0.0481	<0.0488	<0.0476	0.2
Fluoranthene	**202**	**715**	2,230	<0.0488	<0.048	<0.0483	<0.0478	<0.0485	<0.0481	<0.0488	<0.0476	0.2
Pyrene	**160**	**728**	1,520	<0.0488	<0.048	<0.0483	<0.0478	<0.243	<0.0481	<0.0488	<0.0476	0.2
Benzo (a) anthracene	**57.4 J**	**510**	1,050	<0.00488	<0.0048	<0.00483	<0.00478	<0.0243	<0.00481	<0.00488	<0.00476	0.018
Chrysene	**159**	**737**	1,290	<0.00488	<0.0048	**0.0155**	**0.00509**	<0.0243	**0.00818**	**0.0118**	**0.0117**	0.018
Benzo (b) fluoranthene	**111**	**835**	NE	<0.00488	<0.0048	**0.00595**	<0.00478	<0.0243	<0.00481	<0.00488	<0.00476	0.018
Benzo (k) fluoranthene	<21.3	**476**	13,000	<0.00488	<0.0048	<0.00483	<0.00478	<0.0243	<0.00481	<0.00488	<0.00476	0.018
Benzo (a) pyrene	**34.5 J**	**797**	1,450	<0.00488	<0.0048	<0.00483	<0.00478	<0.0243	<0.00481	<0.00488	<0.00476	0.018
Indeno (1,2,3-cd) pyrene	**35.1 J**	**792**	100	<0.00488	<0.0048	**0.00507**	<0.00478	<0.0243	<0.00481	<0.00488	<0.00476	0.018
Dibenzo (a,h) anthracene	**22.1 J**	**232 J**	1,300	<0.00488	<0.0048	<0.00483	<0.00478	<0.0243	<0.00481	<0.00488	<0.00476	0.018
Benzo (ghi) perylene	**84.8 J**	**676**	300	<0.0488	<0.048	<0.0483	<0.0478	<0.243	<0.0481	<0.0488	<0.0476	0.2
Total Organic Carbon	**10,800,000**	**41,200,000**	NE	--	--	--	--	--	--	--	--	NE
Total Suspended Solids	--	--	NE	**3000 J**	**3,000 J**	**9,000 J**	**6,000 J**	**13,000**	**6,000 J**	**15,000**	**4,000 J**	NE
Oil & Grease	--	--	NE	<1,700	<840	**1,000 J**	<808	<500	<481	<840	<808	NE
Hydrocarbons												
Gasoline Range Hydrocarbons	--	--	NE	**500 J**	**240 J**	<250	<250	<238	<238	<1.26	<1.24	NE
Diesel Range Hydrocarbons	--	--	NE	**1,260 J**	**606 J**	**671**	<630	<600	<600	<5.83	<5.71	NE
Heavy Oil Range Hydrocarbons	--	--	NE	**1,260 J**	**606 J**	**422 J**	<630	<600	<600	<9.03	<8.86	NE

Notes:

(a) µg/kg = micrograms per kilogram.

(b) Joint Source Control Strategy Screening Level Value. Values listed are the highlighted values in the 7/16/07 revision of Table 3-1, Portland Harbor Joint Source Control Strategy – Final, December 2005.

(c) ug/l = micrograms per liter.

(d) This is a hardness dependent metal. Screening values were calculated based on 25 mg/l of $CaCO_3$.

(e) -- = Analyte not tested or screening level not available.

(e) ug/kg = micrograms per kilogram

(f) < = not identified above the indicated laboratory detection limit

(g) Values in bold were detected above the laboratory reporting limit.

(h) Shaded values exceed JSCS SLV.

(i) < = not identified above the indicated laboratory detection limit.

(j) NE = JSCS SLV not established

(k) Total PCBs reported as the sum of detected concentrations or, if all Aroclors are nondetect, as the highest MDL.

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 1)

Outfall 1

Sample Date	pH	Suspended Solids, Total	Oil and Grease, Total	Cadmium	Chromium	Copper, Total	Lead, Total	Nickel	Zinc, Total	Iron, Total	Mercury	DDD	DDT	DDE	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Dieldrin	Endosulfan I
	s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	5.5 - 9.0	100	10	0.001	NE	0.020	0.040	NE	0.12	1.000	0.0014	NE	0.0011	0.00001	0.003	NE	NE	NE	0.00024	NE
JSCS Screening Value	NE	NE	NE	0.000094	0.1	0.0027	0.00054	0.016	0.036	NE	0.00077	0.00000031	0.00000022	0.00000022	0.00000005	0.0000049	NE	0.000017	0.000000054	0.000051
10/23/2009	7.09	30.0	ND (4.72)	NS	NS	0.00442	0.00195	NS	0.0619	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2009	7.91	10.0	ND (4.76)	NS	NS	0.00444	ND (0.001)	NS	0.0321	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/5/2010	6.21	20.0	ND (4.72)	NS	NS	0.00236	0.00121	NS	0.0235	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/25/2010	7.77	30.0	ND (4.81)	NS	NS	0.00422	0.00181	NS	0.0387	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/31/2010	7.58	15.0	ND (4.76)	NS	NS	ND (0.00200)	ND (0.00100)	NS	0.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2010	8.64	77.0	ND (4.76)	NS	NS	0.00589	0.00399	NS	0.0742	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/12/2011	7.48	22.0	ND (4.76)	NS	NS	0.00282	0.00124	NS	0.0402	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/18/2011	7.32	111.0	ND (4.76)	NS	NS	0.0116	0.00529	NS	0.104	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/22/2011	8.06	16.0	ND (4.72)	NS	NS	0.00319	0.00111	NS	0.0328	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/27/2011	6.31	14.0	ND (4.76)	NS	NS	0.00421	0.00117	NS	0.0457	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/20/2012	6.35	17.0	ND (4.76)	NS	NS	0.00444	0.00160	NS	0.0460	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/29/2012	7.19	18	ND (4.7)	NS	NS	0.0049	0.0018	NS	0.050	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/11/12	6.63	ND (10)	ND (4.8)	ND (0.001)	ND (0.002)	ND (0.0020)	ND (0.0010)	ND (0.0020)	0.025	0.25	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
11/30/12	6.60	ND (10)	ND (4.9)	NS	NS	ND (0.0020)	ND (0.0010)	NS	0.023	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/23/13	6.1	ND (10)	ND (4.7)	ND (0.001)	0.0027	0.0043	ND (0.0010)	ND (0.0020)	0.024	1.2	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
2/28/2013	7.04	ND (10)	ND (4.7)	ND (0.001)	ND (0.002)	0.0052	ND (0.0010)	0.003	0.063	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/18/13	7.51	ND (10)	ND (4.7)	ND (0.001)	ND (0.002)	0.0028	ND (0.0010)	ND (0.0020)	0.036	0.56	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
12/20/13	6.87	47	ND (4.8)	ND (0.001)	0.019	0.013	0.0057	0.0075	0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/07/14	NS	36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02/15/14	6.37	ND (10)	ND (4.8)	ND (0.001)	ND (0.002)	ND (0.0020)	ND (0.0010)	ND (0.0020)	0.027	0.44	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
03/26/14	6.41	34	ND (4.8)	NS	NS	0.0085	0.003	NS	0.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/13/2014	7.35	ND (10)	ND (5.1)	ND (0.001)	ND (0.002)	0.005	ND (0.001)	0.0026	0.086	0.94	0.0000042	ND (0.0000095)	ND (0.000047)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.000019)
12/10/2014	6.76	ND (10)	ND (5.1)	NS	NS	0.0025	0.0014	NS	0.03	0.61	0.0000058	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 2)

Outfall 1

Sample Date	Endosulfan II	Endosulfan Sulfate	Chlordane (technical)	delta-BHC	Endrin	Endrin aldehyde	Endrin keytone	gamma-BHC (lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene	PCB	Pentachloro-phenol	2-methyl naphthalene	Acenaphthene
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.002	0.02	NE	0.095
JSCS Screening Value	0.000051	0.089	0.00000081	0.000037	0.000036	0.00003	NE	0.000052	NE	0.000000079	0.000000039	0.00003	0.0000002	0.000000064	0.00056	0.0002	0.0002
10/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/5/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/25/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/31/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/12/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/18/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/22/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/27/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/29/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/11/12	ND (0.0000095)	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.00019)	ND (0.00095)	ND (0.000095)	ND (0.000095)
11/30/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/23/13	ND (0.0000095)	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.00019)	ND (0.00095)	ND (0.000095)	ND (0.000095)
2/28/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/18/13	ND (0.0000095)	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.000047)	ND (0.00095)	ND (0.000095)	ND (0.000095)
12/20/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/07/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02/15/14	ND (0.0000095)	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.000048)	ND (0.00095)	ND (0.000095)	ND (0.000095)
03/26/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/13/2014	ND (0.0000095)	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.000024)	ND (0.0000095)	ND (0.000047)	ND (0.00024)	ND (0.000048)	ND (0.00066)	ND (0.000095)	ND (0.000095)
12/10/2014	ND (0.0000095)	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.000048)	ND (0.00067)	ND (0.000095)	ND (0.000095)

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 3)

Outfall 1

Sample Date	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluor-anthene 3,4	Benzo(k) fluor-anthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	Di-n-octyl phthalate	Di-n-butyl phthalate	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethyl phthalate	Dimethyl phthalate
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	NE	2.900	0.001	0.001	0.001	0.001	0.001	0.001	0.014	0.39	0.001	NE	NE	0.29	NE	NE	NE	NE	NE	NE
JSCS Screening Value	0.0002	0.0002	0.000018	0.000018	0.000018	0.000018	0.000018	0.000018	0.0002	0.0002	0.000018	0.0002	0.0002	0.0002	0.0030	0.0030	0.0022	0.0030	0.0030	0.0030
10/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/5/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/25/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/31/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/12/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/18/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/22/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/27/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/29/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/11/12	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
11/30/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/23/13	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
2/28/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/18/13	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
12/20/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/07/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02/15/14	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
03/26/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/13/2014	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00038)	ND (0.00038)	0.008	ND (0.00057)	ND (0.00038)	ND (0.00038)
12/10/2014	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00038)	ND (0.00038)	ND (0.0029)	ND (0.00057)	ND (0.00038)	ND (0.00038)

Notes:

(a) s.u. = standard units.
(b) mg/l = milligrams per liter.
(c) ND = not identified above the indicated laboratory detection limit.
(d) Shaded values exceed JSCS SLV.
(e) NE = JSCS SLV not established.
NS = parameter not sampled for
Current permit benchmarks = 1200-Z permit effective July 1, 2012
JSCS Screen Values from Table 3.1 - Screening Level Values for Sediment, Stormwater, Groundwater and Surface Water

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 4)

Outfall 2

Sample Date	pH **	Suspended Solids, Total **	Oil and Grease, Total **	Cadmium	Chromium	Copper, Total	Lead, Total	Nickel	Zinc, Total	Iron, Total	Mercury	DDD	DDE	DDT	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Dieldrin	Endosulfan I	Endosulfan II
	s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	5.5 - 9.0	100	10	0.001	NE	0.020	0.040	NE	0.12	1.0	0.0014	NE	0.00001	0.0011	0.003	NE	NE	NE	0.00024	NE	NE
JSCS Screening Value	NE	NE	NE	0.000094	0.1	0.0027	0.00054	0.016	0.036	NE	0.00077	0.00000031	0.00000022	0.00000022	5E-08	4.9E-06	NE	0.000017	0.000000054	0.000051	0.000051
10/23/2009	7.15	10.0	ND (4.72)	NS	NS	0.00791	ND (0.001)	NS	0.0497	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2009	8.76	ND (10.0)	ND (4.72)	NS	NS	0.00206	ND (0.001)	NS	0.0479	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/5/2010	6.83	50.0	ND (4.72)	NS	NS	0.0132	0.00458	NS	0.0636	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/26/2010	7.21	ND (10.0)	ND (4.72)	NS	NS	0.00385	ND (0.001)	NS	0.0316	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/31/2010	7.01	ND (10.0)	ND (4.76)	NS	NS	0.0511	0.0165	NS	0.429	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2010	7.95	ND (10.0)	ND (4.76)	NS	NS	0.00553	ND (0.00100)	NS	0.0375	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/12/2011	6.75	ND (10.0)	ND (4.72)	NS	NS	0.00435	ND (0.00100)	NS	0.0355	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/18/2011	7.14	ND (10.0)	ND (4.76)	NS	NS	0.00686	0.00124	NS	0.0614	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/22/2011	6.98	ND (10.0)	ND (4.72)	NS	NS	0.00500	ND (0.00100)	NS	0.0542	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/27/2011	6.15	ND (10.0)	ND (4.72)	NS	NS	0.00336	ND (0.00100)	NS	0.0369	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/20/2012	6.7	ND (10.0)	ND (4.72)	NS	NS	0.00479	0.00105	NS	0.0316	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/29/2012	7.24	ND (10.0)	ND (4.7)	NS	NS	0.0038	ND (0.0010)	NS	0.049	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/11/12	6.84	ND (10)	ND (4.7)	ND (0.0010)	ND (0.0020)	0.0039	ND (0.0010)	0.0034	0.033	0.75	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
11/30/12	6.90	ND (10)	ND (4.7)	ND (0.0010)	0.0023	0.0031	ND (0.0010)	0.0022	0.040	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/23/13	8.00	ND (10)	ND (4.8)	ND (0.0010)	ND (0.0020)	0.0031	ND (0.0010)	ND (0.0020)	0.037	0.46	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
02/28/13	7.01	ND (10)	ND (4.7)	ND (0.0010)	0.0021	0.0054	ND (0.0010)	0.0026	0.059	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/18/13	7.06	ND (10)	ND (4.7)	ND (0.0010)	ND (0.0020)	0.0024	ND (0.0010)	ND (0.0020)	0.054	0.16	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
12/20/13	6.96	ND (10)	ND (4.8)	ND (0.0010)	ND (0.0020)	0.0023	ND (0.0010)	ND (0.0020)	0.058	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/07/14	NS	ND (10)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02/15/14	6.39	ND (10)	ND (4.7)	ND (0.0010)	0.0045	0.0053	0.0014	0.0039	0.12	2.2	NS	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
03/26/14	7.94	ND (10)	ND (4.8)	NS	NS	0.0029	ND (0.0010)	NS	0.041	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/13/2014	7.26	ND (10)	ND (5.2)	ND (0.0010)	ND (0.0020)	ND (0.0020)	ND (0.0010)	ND (0.0020)	0.15	0.25	0.0000031	ND (0.0000095)	ND (0.0000095)	ND (0.000047)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.000014)	ND (0.0000095)
12/10/2014	6.5	ND (10)	ND (5.1)	NS	NS	0.0034	ND (0.0010)	NS	0.081	1.1	0.0000039	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)
AVERAGE	7.12					0.0068	0.0050	0.0030	0.073												
MAX	8.76	50				0.0511	0.0165	0.0039	0.429												

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 5)

Outfall 2

Sample Date	Endosulfan Sulfate	Chlordane (technical)	delta-BHC	Endrin	Endrin aldehyde	Endrin keytone	gamma-BHC (lindane)	gamma-Chlordane	Heptachlor	Heptachlor- epoxide	Methoxychlor	Toxaphene	PCB	Pentachloro-phenol	2-methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.002	0.02	NE	0.095	NE	2.900	0.001
JSCS Screening Value	0.089	0.00000081	0.000037	0.000036	0.00003	NE	0.000052	NE	0.000000079	0.000000039	0.00003	0.0000002	0.000000064	0.00056	0.0002	0.0002	0.0002	0.0002	0.000018
10/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/5/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/26/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/31/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/12/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/18/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/22/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/27/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/29/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/11/12	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.00019)	ND (0.00095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)
11/30/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/23/13	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.00019)	ND (0.00095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)
02/28/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/18/13	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.002)	ND (0.00095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)
12/20/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/07/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02/15/14	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.000048)	ND (0.00095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)
03/26/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/13/2014	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.000043)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.000047)	ND (0.00024)	ND (0.000048)	ND (0.00067)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)
12/10/2014	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.00024)	ND (0.000048)	ND (0.00066)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 6)

Outfall 2

Sample Date	Benzo(a) pyrene	Benzo(b) fluor-anthene 3,4	Benzo(k) fluor-anthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	Di-n-octyl phthalate	Di-n-butyl phthalate	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethyl phthalate	Dimethyl phthalate
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	0.001	0.001	0.001	0.001	0.001	0.014	0.39	0.001	NE	NE	0.29	NE	NE	NE	NE	NE	NE
JSCS Screening Value	0.000018	0.000018	0.000018	0.000018	0.000018	0.0002	0.0002	0.000018	0.0002	0.0002	0.0002	0.0030	0.0030	0.0022	0.0030	0.0030	0.0030
10/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/5/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/26/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/31/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/17/2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/12/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/18/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/22/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/27/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/20/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/29/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/11/12	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
11/30/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/23/13	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
02/28/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/18/13	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
12/20/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
01/07/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02/15/14	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	NS	NS	NS	NS	NS	NS
03/26/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/13/2014	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	0.00092	0.0023	0.0093	0.0058	ND (0.00038)	ND (0.00038)
12/10/2014	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00038)	ND (0.00038)	ND (0.0028)	ND (0.00057)	ND (0.00038)	ND (0.00038)

Notes:

(a) s.u. = standard units.
(b) mg/l = milligrams per liter.
(c) ND = not identified above the indicated laboratory detection limit.
(d) Shaded values exceed JSCS SLV.
(e) NE = JSCS SLV not established.
NS = parameter not sampled for
Current permit benchmarks = 1200-Z permit effective July 1, 2012
JSCS Screen Values from Table 3.1 - Screening Level Values for Sediment, Stormwater, Groundwater and Surface Water

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 7)

Outfall 3

Sample Date	pH	Suspended Solids, Total	Oil and Grease, Total	Cadmium	Chromium	Copper, Total	Lead, Total	Nickel	Zinc, Total	Iron, Total	Mercury	DDD	DDT	DDE	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Dieldrin	Endosulfan I	Endosulfan II
	s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	5.5 - 9.0	100	10	0.001	NE	0.020	0.040	NE	0.12	1.000	0.0014	NE	0.0011	0.00001	0.003	NE	NE	NE	0.00024	NE	NE
JSCS Screening Value	NE	NE	NE	0.000094	0.1	0.0027	0.00054	0.016	0.036	NE	0.00077	0.00000031	0.00000022	0.00000022	0.00000005	0.0000049	NE	0.000017	0.000000054	0.000051	0.000051
11/13/2014	7.36	27	ND (5.2)	ND (0.0010)	0.0031	0.0071	0.0035	0.0023	0.15	1.9	0.0000012	ND (0.000019)	ND (0.000095)	ND (0.000019)	ND (0.0000095)	ND (0.0000095)	ND (0.0000095)	ND (0.000029)	ND (0.0000095)	0.00027	ND (0.000019)
12/10/2014	7.23	46	ND (5.1)	NS	NS	0.0062	0.0047	NS	0.12	2.1	0.0000018	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 8)

Outfall 3

Sample Date	Endosulfan Sulfate	Chlordane (technical)	delta-BHC	Endrin	Endrin aldehyde	Endrin keytone	gamma-BHC (lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene	PCB	Pentachloro-phenol	2-methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.002	0.02	NE	0.095	NE	2.900
JSCS Screening Value	0.089	0.00000081	0.000037	0.000036	0.00003	NE	0.000052	NE	0.000000079	0.000000039	0.00003	0.0000002	0.000000064	0.00056	0.0002	0.0002	0.0002	0.0002
11/13/2014	ND (0.0000095)	ND (0.000095)	ND (0.0000095)	ND (0.000033)	ND (0.0000095)	ND (0.0000095)	ND (0.000019)	ND (0.0000095)	ND (0.000086)	ND (0.0000095)	ND (0.000095)	ND (0.00024)	ND (0.000048)	ND (0.00067)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)
12/10/2014	ND (0.000038)	ND (0.00038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.000038)	ND (0.00095)	ND (0.000048)	ND (0.0066)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)

Table 4: NPDES and 2014 Source Control Stormwater Analytical Results (page 9)

Outfall 3

Sample Date	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluor-anthene 3,4	Benzo(k) fluor-anthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	Di-n-octyl phthalate	Di-n-butyl phthalate	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethyl phthalate	Dimethyl phthalate
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Current Permit Benchmark	0.001	0.001	0.001	0.001	0.001	0.001	0.014	0.39	0.001	NE	NE	0.29	NE	NE	NE	NE	NE	NE
JSCS Screening Value	0.000018	0.000018	0.000018	0.000018	0.000018	0.000018	0.0002	0.0002	0.000018	0.0002	0.0002	0.0002	0.0030	0.0030	0.0022	0.0030	0.0030	0.0030
11/13/2014	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00019)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.00038)	ND (0.00038)	ND (0.0029)	ND (0.00057)	ND (0.00038)	ND (0.00038)
12/10/2014	ND (0.000095)	ND (0.000095)	ND (0.000095)	ND (0.000095)	0.00013	ND (0.00019)	0.000097	ND (0.000095)	ND (0.000095)	ND (0.000095)	0.00010	0.00017	ND (0.0038)	ND (0.0038)	ND (0.028)	ND (0.0057)	ND (0.0038)	ND (0.0038)

Notes:

(a) s.u. = standard units.
(b) mg/l = milligrams per liter.
(c) ND = not identified above the indicated laboratory detection limit.
(d) Shaded values exceed JSCS SLV.
(e) NE = JSCS SLV not established.
NS = parameter not sampled for
Current permit benchmarks = 1200-Z permit effective July 1, 2012
JSCS Screen Values from Table 3.1 - Screening Level Values for Sediment, Stormwater, Groundwater and Surface Water